

# MMWR™

## MORBIDITY AND MORTALITY WEEKLY REPORT

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### National, State, and Urban Area Vaccination Coverage Levels Among Children Aged 19–35 Months — United States, 2000

Since the early 1970s, childhood vaccination has prevented millions of illnesses and tens of thousands of deaths (1). For these health benefits to continue, high levels of vaccination coverage must be attained for each new birth cohort and must be monitored to ensure protection from disease, to characterize undervaccinated populations, and to evaluate efforts to increase coverage. The National Immunization Survey (NIS) provides ongoing national estimates of vaccination coverage among preschool-aged children for the 50 states and 28 selected urban areas\* (2,3). For this report, NIS data collected during 2000 were compared with 1999 data; findings indicate that, during 2000<sup>†</sup>, significant increases were reported on the national level of vaccination coverage with varicella and hepatitis B, and small but statistically significant decreases were reported in coverage with diphtheria, and tetanus toxoid, and pertussis vaccine. Coverage with poliovirus vaccine, *Haemophilus influenzae* type b vaccine, and measles-mumps-rubella vaccine were not significantly different from 1999. As in previous years (4), coverage varied among states. To maximize coverage among preschool-aged children, vaccination providers should continue to apply such strategies as reminders and recalls.

To collect vaccination data for children aged 19–35 months, NIS uses a random-digit-dialing sample of telephone numbers for each survey area. During 2000, 34,087 household interviews were completed. Contacted providers submitted data for 22,958 children; the data then were weighted to represent all children surveyed and to account for nonresponding households, lower vaccination coverage among children in households without telephones, and changes in natality patterns.

During 2000, national vaccination coverage with three doses of any diphtheria and tetanus toxoids and pertussis vaccine (DTaP3) declined from 95.9% in 1999 to 94.1%; coverage with four doses of any diphtheria and tetanus toxoids and pertussis vaccine (DTaP4) declined from 83.3% in 1999 to 81.7%. Coverage was not significantly different

\*Jefferson County, Alabama; Maricopa County, Arizona; Los Angeles, San Diego County, and Santa Clara, California; District of Columbia (DC); Dade and Duval counties, Florida; Fulton/DeKalb County, Georgia; Chicago, Illinois; Marion County, Indiana; Orleans Parish, Louisiana; Baltimore, Maryland; Boston, Massachusetts; Detroit, Michigan; Newark, New Jersey; New York, New York; Cuyahoga and Franklin counties, Ohio; Philadelphia County, Pennsylvania; Davidson and Shelby counties, Tennessee; Bexar, Dallas, and El Paso counties, and Houston, Texas; King County, Washington; and Milwaukee County, Wisconsin.

<sup>†</sup>For this reporting period (January–December 2000), NIS included children born during February 1997–May 1999.

## Vaccination Coverage — Continued

from 1999 to 2000 for three doses of oral poliovirus vaccine (OPV3) (from 89.6% to 89.5%), three doses of *Haemophilus influenzae* type b vaccine (Hib3) (from 93.5% to 93.4%), and one dose of measles-mumps-rubella vaccine (1MMR) (from 91.5% to 90.5%) (Table 1). During 2000, coverage with one dose of varicella vaccine increased from 57.5% in 1999 to 67.8%, and coverage with three doses of hepatitis B vaccine (HepB3) increased from 88.1% in 1999 to 90.3%. National coverage with combined vaccination series 4:3:1:3 (DTaP4, OPV3, one dose of measles-containing vaccine, and Hib3) and 4:3:1:3:3 (4:3:1:3 series and HepB3) decreased from 1999 to 2000 (78.4% to 76.2% and 73.2% to 72.8%, respectively). State-specific and urban-area coverage varied<sup>5</sup> (Table 2).

Reported by: Data Management Div, National Immunization Program, CDC.

**Editorial Note:** National coverage with routinely recommended childhood vaccines increased substantially after the Childhood Immunization Initiative was implemented in 1993 (5). Although coverage with recommended vaccines for each new birth cohort

<sup>5</sup> Range of state-specific coverage during 2000—4:3:1:3 combination: 68.2%–86.9%; 4:3:1:3:3 combination: 63.5%–82.8%. DTaP3:  $\geq 90\%$ ; DTaP4: 72.8%–91.6%. OPV3, 1MMR, and HepB3:  $\geq 85\%$  except in a few states. Hib3:  $\geq 90\%$  except in three states. Variation in coverage was greatest among children who had received one dose of varicella vaccine: 38.0%–84.5% (estimate).

**TABLE 1. Vaccination coverage levels among children aged 19–35 months, by selected vaccines — National Immunization Survey, United States, 1995–2000**

Vaccine/Dose	1995*	1996†	1997‡	1998§	1999**	2000††
	% (95% CI) <sup>§§</sup>	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
DTP/DT/DTaP <sup>¶¶</sup>						
≥3 Doses	94.7 (±0.6)	95.0 (±0.4)	95.5 (±0.4)	95.6 (±0.5)	95.9 (±0.4)	94.1 (±0.5)
≥4 Doses	78.5 (±1.0)	81.1 (±0.7)	81.5 (±0.7)	83.9 (±0.8)	83.3 (±0.8)	81.7 (±0.8)
Poliovirus						
≥3 Doses	87.9 (±0.8)	91.1 (±0.5)	90.8 (±0.5)	90.8 (±0.7)	89.6 (±0.6)	89.5 (±0.6)
Hib***						
≥3 Doses	91.7 (±0.6)	91.7 (±0.5)	92.7 (±0.5)	93.4 (±0.6)	93.5 (±0.5)	93.4 (±0.5)
MMR****						
≥1 Doses	87.8 (±0.7)	90.7 (±0.5)	90.5 (±0.7)	92.0 (±0.6)	91.5 (±0.6)	90.5 (±0.6)
Hepatitis B						
≥3 Doses	68.0 (±1.0)	81.8 (±0.7)	83.7 (±0.6)	87.0 (±0.7)	88.1 (±0.7)	90.3 (±0.6)
Varicella						
≥1 Dose	—	—	25.9 (±0.7)	43.2 (±1.0)	57.5 (±1.0)	67.8 (±0.9)
Combined series						
4:3:1 <sup>   </sup>	76.2 (±1.0)	78.4 (±0.8)	77.9 (±0.7)	80.6 (±0.9)	79.9 (±0.8)	77.6 (±0.9)
4:3:1:3 <sup>    </sup>	74.2 (±1.0)	76.5 (±0.8)	76.2 (±0.8)	79.2 (±0.9)	78.4 (±0.9)	76.2 (±0.9)
4:3:1:3:3 <sup>     </sup>	—	—	—	—	73.2 (±0.9)	72.8 (±0.9)

\* Born during February 1992–May 1994.

† Born during February 1993–May 1995.

‡ Born during February 1994–May 1996.

§ Born during February 1995–May 1997.

\*\* Born during February 1996–May 1998.

†† Born during February 1997–May 1999.

§§ Confidence interval.

¶¶ Diphtheria and tetanus toxoids and pertussis vaccine, diphtheria and tetanus toxoids, and diphtheria and tetanus toxoids and acellular pertussis vaccine.

\*\*\* *Haemophilus influenzae* type b.

|||| Measles-mumps-rubella.

||||| Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, and one or more doses of measles-containing vaccine (MCV).

|||| Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, and three or more doses of Hib.

||||| Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, three or more doses of Hib, and three or more doses of hepatitis B.

## Vaccination Coverage — Continued

**TABLE 2. Estimated vaccination coverage with 4:3:1\*, 4:3:1:3<sup>†</sup>, and 4:3:1:3:3<sup>‡</sup> series among children aged 19–35 months, by state and selected urban areas — National Immunization Survey, United States, 2000**

State	4:3:1	4:3:1:3	4:3:1:3:3
	% (95% CI) <sup>§</sup>	% (95% CI)	% (95% CI)
Alabama	81.1 (±4.3)	80.9 (±4.3)	76.1 (±4.7)
Jefferson County	80.0 (±5.1)	79.4 (±5.1)	77.6 (±5.2)
Rest of state	81.2 (±5.0)	81.2 (±5.0)	75.8 (±5.5)
Alaska	77.6 (±5.2)	77.0 (±5.3)	70.6 (±5.7)
Arizona	74.4 (±4.3)	72.4 (±4.4)	67.2 (±4.5)
Maricopa County	72.6 (±5.8)	70.5 (±5.9)	64.8 (±6.1)
Rest of state	77.5 (±6.0)	75.6 (±6.1)	71.3 (±6.4)
Arkansas	73.6 (±5.4)	72.0 (±5.5)	67.1 (±5.7)
California	77.3 (±3.4)	75.3 (±3.5)	72.3 (±3.6)
Los Angeles	78.2 (±5.1)	76.5 (±5.2)	72.6 (±5.4)
San Diego County	77.5 (±5.2)	75.7 (±5.3)	72.2 (±5.5)
Santa Clara	78.6 (±5.5)	76.0 (±5.8)	72.2 (±6.0)
Rest of state	76.6 (±5.3)	74.5 (±5.4)	72.2 (±5.6)
Colorado	76.3 (±5.1)	73.9 (±5.2)	71.6 (±5.4)
Connecticut	85.3 (±4.3)	84.6 (±4.4)	81.6 (±4.8)
Delaware	76.2 (±5.3)	74.7 (±5.4)	70.0 (±5.7)
District of Columbia	72.8 (±6.2)	70.9 (±6.3)	66.2 (±6.5)
Florida	74.7 (±4.4)	73.6 (±4.5)	71.7 (±4.6)
Dade County	80.1 (±6.3)	77.7 (±6.6)	77.0 (±6.6)
Duval County	81.4 (±4.9)	79.0 (±5.1)	76.7 (±5.3)
Rest of state	73.1 (±5.6)	72.4 (±5.6)	70.3 (±5.8)
Georgia	82.3 (±4.1)	81.1 (±4.2)	77.7 (±4.5)
Fulton/DeKalb County	80.9 (±5.2)	79.7 (±5.3)	77.1 (±5.5)
Rest of state	82.6 (±4.9)	81.5 (±5.1)	77.8 (±5.5)
Hawaii	76.2 (±5.9)	74.8 (±6.0)	72.8 (±6.1)
Idaho	74.6 (±5.1)	73.7 (±5.2)	70.7 (±5.4)
Illinois	76.8 (±4.4)	75.4 (±4.5)	71.2 (±4.7)
Chicago	67.2 (±6.3)	65.1 (±6.4)	60.7 (±6.4)
Rest of state	80.6 (±5.6)	79.4 (±5.8)	75.3 (±6.1)
Indiana	77.7 (±4.6)	76.3 (±4.7)	72.0 (±4.9)
Marion County	70.6 (±6.7)	68.7 (±6.7)	61.9 (±7.1)
Rest of state	79.1 (±5.3)	77.8 (±5.5)	74.0 (±5.7)
Iowa	84.0 (±4.7)	82.8 (±4.8)	82.5 (±4.8)
Kansas	76.5 (±5.3)	76.2 (±5.3)	71.3 (±5.7)
Kentucky	81.4 (±4.9)	80.6 (±5.0)	77.0 (±5.2)
Louisiana	75.7 (±4.8)	74.7 (±4.9)	71.8 (±5.0)
Orleans Parish	70.1 (±6.7)	69.7 (±6.7)	61.1 (±7.0)
Rest of state	76.4 (±5.4)	75.3 (±5.5)	73.2 (±5.6)
Maine	84.1 (±4.3)	83.3 (±4.4)	76.0 (±5.1)
Maryland	80.3 (±4.4)	78.4 (±4.5)	75.4 (±4.7)
Baltimore	72.8 (±5.3)	69.7 (±5.7)	66.8 (±5.8)
Rest of state	81.5 (±5.0)	79.9 (±5.2)	76.8 (±5.4)
Massachusetts	85.7 (±3.9)	85.2 (±4.0)	81.4 (±4.3)
Boston	79.1 (±5.2)	78.7 (±5.2)	74.6 (±5.6)
Rest of state	86.5 (±4.3)	85.9 (±4.4)	82.2 (±4.8)
Michigan	76.3 (±4.7)	75.3 (±4.8)	73.7 (±4.9)
Detroit	61.8 (±7.1)	58.7 (±7.2)	56.4 (±7.3)
Rest of state	78.4 (±5.3)	77.7 (±5.4)	76.2 (±5.5)
Minnesota	86.9 (±4.4)	86.3 (±4.5)	82.4 (±4.9)

\* Four or more doses of diphtheria and tetanus toxoids and pertussis vaccine (DTP), diphtheria and tetanus toxoids (DT), or diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP), three or more doses of oral poliovirus vaccine, and one or more doses of measles-containing vaccine (MCV).

<sup>†</sup> Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, and three or more doses of *Haemophilus influenzae* type b (Hib).

<sup>‡</sup> Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, three or more doses of Hib, and three or more doses of hepatitis B.

<sup>§</sup> Confidence interval

## Vaccination Coverage — Continued

**TABLE 2. Estimated vaccination coverage with 4:3:1\*, 4:3:1:3†, and 4:3:1:3:3‡ series among children aged 19–35 months, by state and selected urban areas — National Immunization Survey, United States, 2000 — Continued**

State	4:3:1	4:3:1:3	4:3:1:3:3
	% (95% CI) <sup>§</sup>	% (95% CI)	% (95% CI)
Mississippi	83.1 (±4.6)	81.1 (±4.8)	75.9 (±5.5)
Missouri	78.9 (±5.3)	78.3 (±5.3)	76.8 (±5.4)
Montana	78.4 (±5.2)	76.6 (±5.3)	71.1 (±5.7)
Nebraska	80.4 (±4.9)	78.7 (±5.1)	75.5 (±5.4)
New Hampshire	84.8 (±4.2)	83.2 (±4.4)	78.9 (±4.8)
New Jersey	76.8 (±5.0)	75.9 (±5.0)	71.2 (±5.3)
Newark	65.3 (±6.6)	63.1 (±6.6)	61.8 (±6.7)
Rest of state	77.4 (±5.2)	76.5 (±5.2)	71.6 (±5.5)
New Mexico	71.7 (±5.7)	68.2 (±5.9)	64.5 (±6.1)
New York	76.6 (±3.7)	74.7 (±3.9)	72.3 (±4.0)
New York	70.7 (±5.9)	68.1 (±6.1)	66.2 (±6.2)
Rest of state	81.9 (±4.6)	80.4 (±4.8)	77.7 (±5.1)
North Carolina	87.6 (±3.9)	86.9 (±4.0)	82.8 (±4.4)
North Dakota	81.4 (±4.6)	81.4 (±4.6)	80.3 (±4.7)
Ohio	72.5 (±4.9)	71.8 (±5.0)	68.9 (±5.0)
Cuyahoga County	73.9 (±5.7)	73.1 (±5.7)	66.8 (±6.1)
Franklin County	78.4 (±5.3)	77.2 (±5.5)	71.1 (±5.9)
Rest of state	71.4 (±6.3)	70.8 (±6.3)	68.9 (±6.4)
Oklahoma	72.2 (±5.7)	71.0 (±5.8)	68.3 (±5.8)
Oregon	80.3 (±4.9)	79.1 (±5.0)	74.7 (±5.4)
Pennsylvania	81.2 (±4.3)	78.4 (±4.6)	77.8 (±4.6)
Philadelphia County	76.8 (±4.9)	74.2 (±5.1)	70.8 (±5.3)
Rest of state	82.0 (±5.1)	79.2 (±5.3)	79.0 (±5.3)
Rhode Island	83.0 (±4.3)	82.3 (±4.4)	80.5 (±4.5)
South Carolina	80.6 (±5.0)	80.3 (±5.0)	78.5 (±5.2)
South Dakota	78.4 (±5.1)	77.6 (±5.2)	73.6 (±5.4)
Tennessee	82.0 (±3.6)	80.9 (±3.7)	76.8 (±4.1)
Davidson County	74.3 (±5.7)	73.2 (±5.9)	68.5 (±6.1)
Shelby County	79.9 (±5.3)	77.1 (±5.6)	75.6 (±5.7)
Rest of state	83.9 (±4.9)	83.3 (±5.0)	78.5 (±5.6)
Texas	69.5 (±3.8)	68.5 (±3.9)	63.5 (±4.0)
Bexar County	68.0 (±5.8)	67.6 (±5.8)	65.6 (±5.8)
Dallas County	68.9 (±5.7)	67.1 (±5.8)	62.0 (±6.0)
El Paso County	71.5 (±5.3)	69.9 (±5.4)	67.1 (±5.5)
Houston	65.4 (±6.5)	64.5 (±6.5)	60.1 (±6.6)
Rest of state	70.5 (±5.7)	69.5 (±5.7)	64.0 (±6.0)
Utah	77.4 (±5.2)	76.7 (±5.2)	68.2 (±5.8)
Vermont	82.7 (±4.6)	82.5 (±4.6)	77.0 (±5.3)
Virginia	76.2 (±5.8)	73.8 (±6.0)	70.7 (±6.1)
Washington	78.7 (±3.8)	77.2 (±4.0)	72.5 (±4.2)
King County	76.5 (±5.4)	75.1 (±5.5)	66.9 (±6.1)
Rest of state	79.6 (±4.8)	78.1 (±5.0)	74.6 (±5.3)
West Virginia	75.8 (±5.7)	75.5 (±5.7)	71.9 (±6.0)
Wisconsin	80.1 (±3.9)	79.8 (±4.0)	74.2 (±4.4)
Milwaukee County	69.1 (±6.6)	69.1 (±6.6)	62.9 (±6.7)
Rest of state	83.3 (±4.7)	82.9 (±4.8)	77.6 (±5.3)
Wyoming	79.7 (±4.6)	79.0 (±4.7)	78.2 (±4.8)
Overall	77.6 (±0.9)	76.2 (±0.9)	72.8 (±0.9)

\* Four or more doses of diphtheria and tetanus toxoids and pertussis vaccine (DTP), diphtheria and tetanus toxoids (DT), or diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP), three or more doses of oral poliovirus vaccine, and one or more doses of measles-containing vaccine (MCV).

† Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, and three or more doses of *Haemophilus influenzae* type b (Hib).

‡ Four or more doses of DTP/DT/DTaP, three or more doses of oral poliovirus vaccine, one or more doses of MCV, three or more doses of Hib, and three or more doses of hepatitis B.

§ Confidence interval.

*Vaccination Coverage — Continued*

remains high, vigilance is needed to maintain these levels. The slight declines in coverage with certain vaccines from 1999 to 2000 do not pose a major public health risk; however, should vaccine-preventable diseases be introduced into low coverage geographic areas, the accumulation of susceptible persons might serve as a reservoir to disseminate diseases.

Reduced vaccination coverage may be the result of missed opportunities to vaccinate and incomplete or scattered vaccination records (6,7). Some states and counties have compiled population-based, computerized registries that contain vaccination information on nearly all preschool-aged children. These registries enable providers to identify children who are due for vaccinations and to automatically review a child's vaccination history to determine the vaccines needed on a particular visit.

The findings in this report are subject to at least three limitations. First, NIS is a telephone survey; although statistical adjustments compensate for nonresponse and nontelephone households, and other potential sources of bias, some bias might remain. Second, NIS relies on provider-verified vaccination histories. The completeness of provider records and data provided to NIS is unknown. Third, because of sampling uncertainty in NIS, particularly on the subnational level, results should be interpreted with caution.

Standards for pediatric vaccination practices that first were recommended in 1992 by the National Vaccine Advisory Committee (8) and were endorsed by medical professional organizations are being revised to reflect a largely privatized vaccination delivery system with improved public financing for vulnerable children through the Vaccines for Children program and an emphasis on adolescent vaccination. State and local vaccination programs and public and private vaccination providers should continue to use reminders and recalls, vaccinate at every opportunity, and administer multiple vaccinations when indicated to ensure the highest possible coverage among preschool-aged children.

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<sup>1</sup> All *MMWR* references are available on the Internet at <<http://www.cdc.gov/mmwr>>. Use the search function to find specific articles.

*Public Health Dispatch***Norwalk-Like Virus Outbreaks at Two Summer Camps — Wisconsin, June 2001**

On June 27 and 28, 2001, the Wisconsin Division of Public Health was notified by two local health departments of outbreaks of gastroenteritis\* at two summer recreational camps (camps A and B) in northern Wisconsin. This report summarizes the investigation of these outbreaks, which documents person-to-person transmission of "Norwalk-like virus" (NLV) and underscores the importance of cleaning environmental surfaces and the availability and use of hand-washing facilities at recreational camps.

Camp A opened for the 2001 season with a week of staff training on June 10. During this week, several counselors became ill with fatigue, nausea, vomiting, and diarrhea with illness duration of 24–48 hours. Campers first arrived for a 6-day camp session on June 17 and, within 30 hours of arrival, began having signs and symptoms identical to those experienced by the counselors. A second group of campers replaced the previous campers on June 24. Because many persons became ill in the second group, the camp session was canceled, the campers were sent home, and the local public health department was notified on June 27. During the 3-week period, approximately 80 (20%) of 400 campers and camp staff were ill.

The first case of illness was noted at camp B on June 24 when a child arrived at camp with diarrhea. On June 25, another camper became ill with nausea, vomiting, and diarrhea. The next 5 days, at least 40 (17%) of the 240 campers and camp staff became ill with identical signs and symptoms lasting 24–48 hours. The campers remained at camp B for the full 1-week session.

Inspection of the camps revealed no substantial problems with food storage or preparation; no leftover foods were available for testing. The campers served themselves family style in a single dining hall at each camp. Ill campers were housed in cabins (camp A) or tents (camp B) with campers who were not ill. Most toilet facilities were pit toilets with hand-washing facilities consisting of cool running water. The camps provided no soap or towels at the pit toilets. Nonmunicipal wells were the source of drinking water at the camps. An environmental survey found no deficiencies with these wells.

Stool specimens were obtained from ill campers and staff at camps A and B. Bacterial enteric pathogen testing was negative and reverse transcriptase polymerase chain reaction for NLV was positive for three of the eight specimens from camp A and two of the four specimens from camp B. Samples of the well water obtained 3 weeks after the outbreaks were negative for fecal coliforms.

The camps, which serve boys aged 10–18 years and are affiliated with the same national youth organization, are located 80 miles apart. They shared no food or personnel and no epidemiologic links were apparent between the camps. Gene sequencing to determine relatedness of the viruses is pending. Although the initial sources of NLV were not discovered, the nature of both outbreaks, particularly the onsets of illness during a several day period and the continuation of the outbreak among separate groups of campers at camp A, indicated the infections were spread within each camp by person-to-person transmission.

\*Defined as nausea, vomiting, or diarrhea in a camper or staff member while at camp A or B during June 10–30, 2001.



*Norwalk-Like Virus — Continued*

NLV can be spread from person-to-person by direct contact, fomites, and aerosols (1–3). The close contact of ill and well campers and the rustic setting of the camps probably contributed to person-to-person transmission by contaminated surfaces in the toilet, dining hall, and living facilities. During June 30–July 1, the washable surfaces at the camps were cleaned with a 10% bleach solution and soap dispensers were added to the hand-washing facilities at camp A. No further cases of gastrointestinal illness were reported at the camps after June 30.

*Reported by:* L Conlon, Oneida County Health Dept, Rhinelander; K Pranica, L Donart, Oconto County Public Health Div, Oconto; M Proctor, PhD, M Simone, L Lucht, T Boers, JP Davis, MD, Wisconsin Dept of Health and Family Svcs. Div of Applied Public Health Training, Epidemiology Program Office; and an EIS Officer, CDC.

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<sup>1</sup> All *MMWR* references are available on the Internet at <<http://www.cdc.gov/mmwr>>. Use the search function to find specific articles.

*Notice to Readers***Fever, Jaundice, and Multiple Organ System Failure Associated With 17D-Derived Yellow Fever Vaccination, 1996–2001**

At the June 2001 meeting of the Advisory Committee for Immunization Practices (ACIP), seven cases of multiple organ system failure (MOSF) in recipients of 17D-derived yellow fever (YF) vaccine were presented (1–3). In response, an ACIP working group was formed to review the cases, assess the risk for serious adverse events following YF vaccination, and consider revision of the 1990 YF vaccination recommendations (4). This notice summarizes these cases and describes an enhanced surveillance program designed to refine risk estimates and improve histopathologic documentation of MOSF potentially associated with YF vaccination.

Derived from the original 17D YF vaccine strain, the live, attenuated 17D-204 and 17DD YF strains are the most commonly used YF vaccines (5). In 1999 and 2000, two Brazilian residents aged 5 and 22 years became ill after receiving 17DD YF vaccine administered during a campaign initiated in response to a local YF epidemic. During 1996–2001, five persons aged 56–79 years, including four U.S. residents and one Australian resident (two countries where YF is not endemic) became ill after receiving 17D-204 YF vaccine administered in anticipation of international travel. Two of the five persons were planning to travel to countries where local YF transmission had never been reported.

All seven persons became ill within 2–5 days of vaccination and required intensive care; six died. None had documented immunodeficiency, and all were in their usual state of health before vaccination. Illness was characterized by fever, lymphocytopenia, thrombocytopenia, mild-to-moderate elevation of hepatocellular enzymes, hypotension with

*Yellow Fever Vaccination — Continued*

poor tissue perfusion, and respiratory failure. Most patients also had headache, vomiting, myalgias, hyperbilirubinemia, and renal failure requiring hemodialysis.

In the Brazilian and Australian cases, histopathologic changes in the liver included midzonal necrosis, microvesicular fatty change, and Councilman bodies, which are characteristic of wild-type YF. Using immunohistochemistry (IHC), YF viral antigen was identified in areas of midzonal necrosis in liver specimens from the two 17DD recipients. In a liver specimen from the third patient (a 17D-204 recipient), electron microscopy showed flavivirus-like particles in the areas of midzonal necrosis. Vaccine-type YF virus was isolated from blood and autopsy material (i.e., brain, liver, kidney, spleen, lung, skeletal muscle, or skin) of these three persons, who died 8–11 days after vaccination. Vaccine-type YF virus was isolated from the blood of two of the four U.S. patients (17D-204 recipients) 7–8 days after vaccination. Viremia after vaccination with YF may occur in healthy persons. Virus also was isolated from the cerebrospinal fluid (CSF) of one of these two patients, although the presence of red blood cells and absence of white blood cells in CSF may suggest that blood contaminating the CSF was the possible source of virus. No hepatocellular necrosis was observed in a liver specimen from the only U.S. case-patient who underwent biopsy; however, IHC revealed rare YF virus antigen within Kupffer cells.

The 17D-204 and 17DD YF vaccines are among the safest and most effective viral vaccines (5). Since 1965, approximately eight million doses of 17D-derived YF vaccine have been administered to U.S. travelers and approximately 300 million doses have been administered to persons in areas where YF is endemic. Although 2%–5% of persons who receive vaccine report headaches, myalgia, and low-grade fever 5–10 days after vaccination, <1% report having to curtail their usual activities. The frequency of anaphylaxis attributed to YF vaccine is approximately one in 130,000 vaccinees (4,6). Reports of other severe illnesses attributed to YF vaccination (including encephalitis, primarily in infants) are rare. Since 1965, post-YF vaccination encephalitis has been reported in one U.S. resident aged >9 months (estimated incidence: one in eight million) (5). MOSF associated with 17D-derived YF vaccination was not reported before 1996. The frequency of febrile MOSF cases reported to the Vaccine Adverse Event Reporting System (VAERS) after vaccination with 17D-204 YF vaccine in the United States during 1990–1998 is approximately one in 400,000 distributed doses (7).

An estimated 200,000 cases of YF occur each year in South America and Africa (5). As a result, YF is an important vaccine-preventable disease among travelers to areas where YF occurs on these continents. In 1996 and 1999, two U.S. and two European unvaccinated travelers to areas where YF is endemic died of YF viral infection (1,8). The risk for YF in unvaccinated travelers probably is increasing because potential YF transmission zones are expanding to include urban areas with large populations of susceptible humans and abundant competent mosquito vectors. Vaccination is the most effective preventive measure against YF, a disease that has no specific treatment and may cause death in 20% of patients (5). Despite a rare, possibly causal relation between YF vaccination and MOSF, YF vaccination of persons traveling in areas where YF transmission occurs should continue as currently recommended, at least until more definitive and complete data are available and analyzed by the ACIP working group. However, health-care providers should provide YF vaccine only to persons planning to travel to areas reporting YF activity or areas in the YF endemic zone. More information on YF activity and appropriate indications for YF vaccine is available at <<http://www.cdc.gov/travel/yfever.htm>>.



*Yellow Fever Vaccination — Continued*

A causal association between MOSF and 17DD YF vaccination is supported by histopathologic studies for two cases. Because of a lack of tissue specimens from most U.S. cases (recipients of 17D-204 YF vaccine), no definitive histopathologic support for a causal relationship exists. However, the temporal association with recent receipt of YF vaccine and the similarity of the clinical presentations in all four U.S. cases suggest the possibility of a causal association. The 17DD and 17D-204 YF vaccine strain genomes are >99% homologous; however, the strains differ in the amino acid sequence of some of the structural proteins (9). The pathophysiologic mechanisms causing MOSF may differ among recipients of 17DD and 17D-204 YF vaccine. To clearly define a causal association between 17D-204 and MOSF, more tissue histopathology and molecular virologic studies of specimens from 17D-204 YF vaccinees with MOSF are needed.

To refine estimates of the risk for MOSF following YF vaccination, enhanced surveillance is essential. Through VAERS, the Food and Drug Administration and CDC receive reports of adverse effects potentially related to YF vaccine and other vaccines. VAERS report forms can be obtained by telephone, (800) 822-7967, or at <<http://www.vaers.org>>. Completed reports can be submitted by fax ((877) 721-0366), mail (P.O. Box 1100, Rockville, Md 20849-1100), or e-mail ([info@vaers.org](mailto:info@vaers.org)). Reporters may be asked to provide supplemental clinical information about patients with fever of 101.3 F (38.5 C) lasting  $\geq 24$  hours and illness within 10 days of YF vaccination and information about the availability of previously collected clinical or autopsy specimens.

CDC will conduct virologic and immunohistochemical studies of these specimens to clarify the role of the 17D-204 YF vaccine strain in the patient's illness. Additional information about this enhanced surveillance is available at <<http://www.cdc.gov/ncidod/dvbid/yellowfever/index.htm>>.

*References\**

1. Martin M, Tsai TF, Cropp B, et al. Fever and multi-system organ failure associated with 17D-204 yellow fever vaccination: a report of four cases. *Lancet* 2001;358:98-104.
2. Vasconcelos PFC, Luna EJ, Galler R, et al. Serious adverse events associated with yellow fever 17DD vaccine in Brazil: a report of two cases. *Lancet* 2001;358:91-7.
3. Chan RC, Penney DJ, Little D, Carter IW, Roberts JA, Rawlinson WD. Hepatitis and death following vaccination with 17D-204 yellow fever vaccine. *Lancet* 2001;358:121-2.
4. CDC. Yellow fever vaccine recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1990;39(no. RR-6).
5. Monath TP. Yellow fever. In: Plotkin SA, Orenstein WA, eds. *Vaccines*. 3rd ed. Philadelphia, Pennsylvania: W.B. Saunders, 1999.
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7. Martin M, Weld LH, Tsai TF, et al. Advanced age as a risk factor for illness temporally associated with yellow fever vaccination. *Emerg Infect Dis* 2001(in press).
8. CDC. Fatal yellow fever in a traveler returning from Venezuela, 1999. *MMWR* 2000;49:303-5.
9. Jennings AD, Whitby JE, Minor PD, Barrett AD. Comparison of the nucleotide and deduced amino acid sequences of the structural protein genes of the yellow fever 17DD vaccine strain from Senegal with those of other yellow fever vaccine viruses. *Vaccine* 1993;11:679-81.

\*All *MMWR* references are available on the Internet at <<http://www.cdc.gov/mmwr>>. Use the search function to find specific articles.

### Notices to Readers

#### **Update on Spectinomycin Availability in the United States**

In April 2001, Pharmacia Corporation (Peapack, New Jersey) announced the discontinuation of its U.S. production of spectinomycin (Trobicin®)\* and that its remaining inventory would expire on June 30, 2001 (1). Since then, examination of the inventory has revealed that, although some lots of the bacteriostatic water packaged with the spectinomycin have expired, the spectinomycin powder has a shelf-life beyond June 30. The Food and Drug Administration has approved Pharmacia's request to remove the bacteriostatic water and to relabel the current inventory of spectinomycin to expire on December 31. To obtain spectinomycin or to verify whether a spectinomycin lot may continue to be used, contact Wendy Johnson, Pharmacia Corporation, telephone (800) 976-7741, extension 30110; fax (800) 852-6421.

Pharmacia is planning to resume U.S. spectinomycin production later in 2001. When new spectinomycin is available, it will be distributed again through the usual wholesale distribution network.

#### *Reference*<sup>1</sup>

1. CDC. Shortage of spectinomycin—United States. MMWR 2001;50:470.

\*Use of trade names is for identification only and does not imply endorsement by CDC or the U.S. Department of Health and Human Services.

<sup>1</sup> All MMWR references are available on the Internet at <<http://www.cdc.gov/mmwr>>. Use the search function to find specific articles.

#### **Publication of Updated Guidelines for Evaluating Public Health Surveillance Systems**

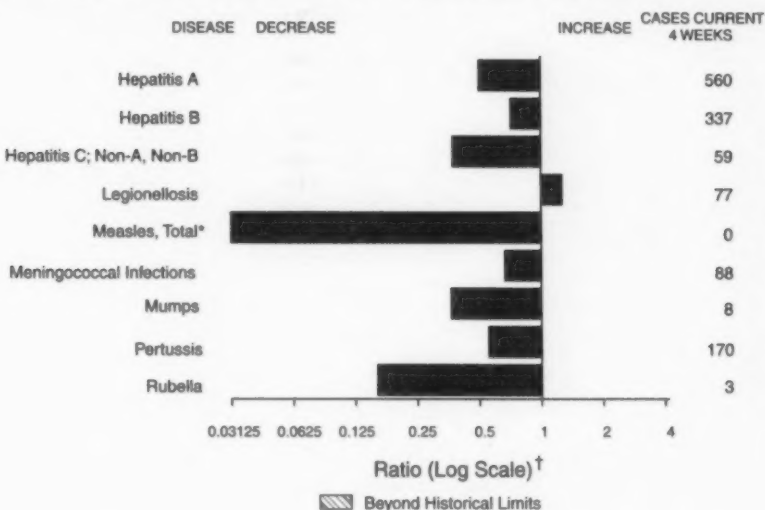
In July 200, CDC published *Updated Guidelines for Evaluating Public Health Surveillance Systems* (1). The original report was published in 1988 (2). The integration of surveillance and health information systems, the establishment of data standards, the electronic exchange of health data, and changes in the objectives of public health surveillance to facilitate the response of public health to emerging health threats have necessitated the update of the guidelines (1). These guidelines describe various tasks involved in evaluating a public health surveillance system and provide relevant standards to assess the quality of the evaluation activities. This information is valuable to a wide audience, including public health practitioners; health-care providers; data providers and users; professional, private, and nonprofit organizations; and government officials at the local, state, and federal levels.

Copies of the guidelines are available at <[http://www.cdc.gov/mmwr/mmwr\\_rr.html](http://www.cdc.gov/mmwr/mmwr_rr.html)> or from CDC's Office of Scientific and Health Communications, Epidemiology Program Office, Mailstop C-08, 1600 Clifton Road, N.E., Atlanta, GA 30333; telephone (404) 639-3636.

#### *References*<sup>\*</sup>

1. CDC. Updated guidelines for evaluating surveillance systems: recommendations from the guidelines working group. MMWR 2001;50(no. RR-13).
2. CDC. Guidelines for evaluating surveillance systems. MMWR 1988;37(no. S-5).

<sup>\*</sup>All MMWR references are available on the Internet at <<http://www.cdc.gov/mmwr>>. Use the search function to find specific articles.

**FIGURE 1. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending July 28, 2001, with historical data**

\* No measles cases were reported for the current 4-week period yielding a ratio for week 30 of zero (0).

<sup>†</sup> Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

**TABLE 1. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending July 28, 2001 (30th Week)**

	Cum. 2001		Cum. 2001
Anthrax	-	Poliomyelitis, paralytic	-
Brucellosis*	40	Psittacosis*	9
Cholera	4	Q fever*	14
Cyclosporiasis*	73	Rabies, human	1
Diphtheria	82	Rocky Mountain spotted fever (RMSF)	241
Ehrlichiosis: human granulocytic (HGE)*	33	Rubella, congenital syndrome	-
human monocytic (HME)*	8	Streptococcal disease, invasive, group A	2,277
Encephalitis: California serogroup viral*	1	Streptococcal toxic-shock syndrome*	35
eastern equine*	1	Syphilis, congenital	84
St. Louis*	-	Tetanus	13
western equine*	-	Toxic-shock syndrome	74
Hansen disease (leprosy)*	42	Trichinosis	13
Hantavirus pulmonary syndrome**	4	Tularemia*	50
Hemolytic uremic syndrome, postdiarrheal*	60	Typhoid fever	142
HIV infection, pediatric**	96	Yellow fever	-
Plague	2		

-: No reported cases.

\*Not notifiable in all states.

<sup>†</sup> Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP). Last update June 26, 2001.

<sup>‡</sup> Updated from reports to the Division of STD Prevention, NCHSTP.

**TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)**

Reporting Area	AIDS		Chlamydia <sup>a</sup>		Cryptosporidiosis		Escherichia coli O157:H7*		PHLIS	
	Cum. 2001 <sup>b</sup>	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
	NETSS									
UNITED STATES	19,145	22,630	379,710	392,750	1,027	966	1,045	1,933	827	1,763
NEW ENGLAND	746	1,317	12,626	13,222	46	58	123	196	83	202
Maine	20	20	662	784	4	9	14	14	15	14
N.H.	17	21	718	598	2	6	20	17	16	19
Vt.	10	17	342	306	17	14	5	21	2	23
Mass.	411	837	5,828	5,564	16	18	63	88	28	84
R.I.	53	54	1,601	1,459	3	2	6	9	5	11
Conn.	235	368	3,475	4,511	4	9	15	47	17	51
MID. ATLANTIC	3,974	5,339	43,772	37,655	131	179	85	212	92	153
Upstate N.Y.	322	539	7,803	776	52	48	64	129	66	38
N.Y. City	1,996	2,958	17,045	15,663	53	93	4	14	7	10
N.J.	960	1,030	5,693	7,200	4	7	17	69	19	64
Pa.	696	812	13,431	14,016	22	31	N	N	-	41
E.N. CENTRAL	1,408	2,253	54,588	66,666	319	228	242	438	163	342
Ohio	237	344	7,727	17,760	72	27	67	70	47	80
Ind.	165	214	8,243	7,378	33	13	38	46	21	53
Ill.	665	1,289	14,915	19,247	1	36	56	106	41	77
Mich.	261	297	16,947	13,002	76	37	26	55	27	48
Wis.	80	109	6,756	9,279	137	116	55	161	27	84
W.N. CENTRAL	454	568	19,478	22,044	124	81	142	248	147	301
Minn.	85	101	3,750	4,522	62	11	47	56	63	88
Iowa	47	60	1,858	2,882	31	28	29	52	24	71
Mo.	218	277	7,293	7,600	10	13	22	66	34	61
N. Dak.	1	2	534	505	3	5	1	7	12	15
S. Dak.	19	4	957	1,039	5	9	10	17	8	24
Nebr.	39	38	1,703	2,133	13	12	22	35	-	32
Kans.	46	86	3,383	3,383	-	3	11	15	6	10
S. ATLANTIC	6,167	6,085	70,998	73,048	167	140	104	135	57	161
Del.	116	111	1,648	1,629	1	4	1	1	3	-
Md.	751	691	6,901	7,614	27	8	8	13	1	1
D.C.	465	390	1,663	1,807	9	5	-	-	-	1
Va.	501	382	10,227	9,344	13	4	28	28	20	34
W. Va.	49	37	1,339	1,209	1	3	3	10	1	5
N.C.	402	371	10,168	12,717	18	15	27	24	13	41
S.C.	350	456	6,436	5,114	-	-	3	10	3	11
Ge.	757	704	13,402	15,085	57	64	14	15	9	30
Fla.	2,776	2,943	19,214	18,529	41	37	20	34	7	39
E.S. CENTRAL	977	1,097	28,098	28,276	25	31	46	69	43	57
Ky.	201	127	5,039	4,542	3	4	16	22	23	19
Tenn.	293	438	8,484	8,198	5	7	20	29	18	30
Ala.	224	301	7,873	8,413	9	10	9	5	-	4
Miss.	259	231	6,702	7,123	8	10	1	13	2	4
W.S. CENTRAL	2,058	2,383	58,970	59,944	20	52	36	155	54	192
Ark.	104	111	4,283	3,770	5	3	4	36	-	30
La.	472	368	9,778	10,875	7	10	2	12	24	27
Okla.	107	185	6,201	4,964	6	4	13	9	15	7
Tex.	1,375	1,721	38,708	40,335	2	36	17	98	15	128
MOUNTAIN	714	836	21,261	22,932	63	44	123	195	77	150
Mont.	12	9	1,015	847	6	3	6	20	-	-
Idaho	15	16	952	1,084	7	3	16	24	-	19
Wyo.	1	7	468	451	1	5	5	10	1	6
Colo.	140	200	3,694	6,894	19	12	54	78	44	56
N. Mex.	56	88	3,078	2,787	12	2	9	7	6	24
Ariz.	295	244	8,481	7,331	4	3	15	30	9	24
Utah	63	86	961	1,369	12	8	12	22	16	31
Nev.	132	186	2,612	2,189	2	3	6	4	1	6
PACIFIC	2,647	2,752	69,919	68,963	132	153	144	285	111	205
Wash.	290	291	7,695	7,331	N	U	38	99	31	109
Oreg.	112	107	2,333	4,036	14	9	22	46	17	51
Calif.	2,204	2,259	56,205	54,189	115	144	72	117	60	36
Alaska	13	12	1,552	1,392	-	-	3	15	-	1
Hawaii	28	83	2,134	2,015	3	-	9	8	3	8
Guam	9	13	-	278	-	-	N	N	U	U
P.R.	580	707	1,692	U	-	-	N	U	U	U
V.I.	2	24	53	-	-	-	1	5	U	U
Amer. Samoa	-	-	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	69	U	-	U	-	U	U	U

N: Not notifiable.

U: Unavailable.

- : No reported cases.

C.N.M.I.: Commonwealth of Northern Mariana Islands.

\* Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

<sup>a</sup> Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.<sup>b</sup> Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update June 26, 2001.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)

Reporting Area	Gonorrhea		Hepatitis C: Non-A, Non-B		Legionellosis		Listeriosis	Lyme Disease	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	173,971	196,595	1,561	1,935	485	482	232	3,840	7,598
NEW ENGLAND	3,478	3,753	14	15	25	28	29	1,021	1,960
Maine	73	46	-	1	2	2	-	-	-
N.H.	93	63	-	-	6	2	1	73	38
Vt.	43	34	6	3	4	3	1	3	12
Mass.	1,775	1,500	8	8	5	13	15	150	773
R.I.	414	347	-	3	2	3	1	144	143
Conn.	1,080	1,763	-	-	6	5	11	651	996
MID. ATLANTIC	21,735	21,318	408	410	83	119	35	1,934	4,246
Upstate N.Y.	4,558	3,900	34	20	29	35	15	1,048	1,291
N.Y. City	7,142	6,608	-	-	6	17	6	1	147
N.J.	3,425	4,260	343	264	5	9	7	85	1,818
Pa.	6,610	6,550	31	26	43	58	7	800	990
E.N. CENTRAL	29,359	39,270	109	152	121	128	27	216	532
Ohio	4,537	10,525	7	5	64	46	8	55	30
Ind.	3,413	3,380	1	-	12	22	-	3	11
Ill.	9,312	11,854	11	16	-	18	-	-	29
Mich.	9,819	9,578	90	131	29	22	13	-	17
Wis.	2,278	3,933	-	-	16	20	2	158	445
W.N. CENTRAL	8,157	9,705	397	354	37	31	6	143	106
Minn.	1,214	1,806	3	5	9	1	-	103	46
Iowa	428	619	-	1	6	6	-	18	9
Mo.	4,322	4,783	387	339	12	17	3	15	34
N. Dak.	16	40	-	-	1	-	-	-	-
S. Dak.	144	161	-	-	3	1	-	-	-
Nebr.	556	821	3	3	5	2	1	3	2
Kans.	1,477	1,475	4	6	1	4	2	4	13
S. ATLANTIC	43,574	51,015	63	62	100	82	40	425	625
Del.	931	930	-	2	2	5	-	26	128
Md.	3,810	5,152	10	8	22	26	5	265	371
D.C.	1,468	1,331	-	2	7	-	-	7	2
Va.	5,653	5,654	-	3	14	13	7	83	74
W. Va.	359	374	8	12	N	N	4	8	18
N.C.	8,611	10,273	10	13	5	8	2	18	22
S.C.	4,632	4,887	5	1	4	2	3	2	-
Ge.	7,214	9,533	-	2	6	5	8	-	-
Fla.	10,896	12,881	30	19	40	23	11	16	8
E.S. CENTRAL	18,131	20,326	126	281	35	19	11	18	22
Ky.	1,942	1,936	4	19	8	11	4	8	5
Tenn.	5,674	6,454	43	61	17	5	3	6	13
Ala.	6,155	6,713	2	7	8	2	4	4	2
Miss.	4,360	5,223	77	194	2	1	-	-	2
W.S. CENTRAL	28,621	31,170	161	506	5	19	5	7	44
Ark.	2,646	2,059	3	5	-	-	1	-	3
La.	6,813	7,691	74	269	2	7	-	1	3
Okla.	2,636	2,124	3	4	3	2	1	-	-
Tex.	16,326	19,296	81	228	-	10	3	6	38
MOUNTAIN	5,810	5,953	201	40	35	23	20	8	5
Mont.	53	26	1	2	-	1	-	-	-
Idaho	29	50	1	3	2	4	1	3	1
Wyo.	36	34	159	2	3	-	1	3	2
Colo.	1,840	1,823	13	7	10	7	3	1	-
N. Mex.	488	594	10	11	2	1	6	-	-
Ariz.	2,330	2,463	9	11	11	5	6	-	-
Utah	86	141	2	-	5	5	1	-	-
Nev.	939	822	6	4	2	-	5	1	2
PACIFIC	15,106	14,075	82	115	44	33	56	68	58
Wash.	1,681	1,283	16	18	6	13	3	2	3
Oreg.	340	528	9	21	N	N	1	-	5
Calif.	12,516	11,816	57	74	34	20	49	59	49
Alaska	222	182	-	-	-	-	-	2	1
Hawaii	347	266	-	2	4	-	3	N	N
Guam	-	27	-	2	-	-	-	-	-
P.R.	455	299	1	1	2	-	-	N	N
V.I.	6	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	-	U	U
C.N.M.I.	7	U	-	U	-	U	-	-	U

N: Not notifiable.

U: Unavailable.

-: No reported cases.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	NETSS		PHLIS	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	573	732	3,393	3,834	16,765	19,134	13,458	16,950
NEW ENGLAND	34	36	338	428	1,272	1,184	1,050	1,237
Maine	4	4	40	82	116	52	96	61
N.H.	2	1	7	8	114	79	113	80
Vt.	-	2	37	38	41	66	39	64
Mass.	11	15	120	140	727	702	480	693
R.I.	3	5	30	21	86	46	94	91
Conn.	15	9	104	139	208	210	248	248
MID. ATLANTIC	123	166	618	690	2,054	2,679	2,117	2,759
Upstate N.Y.	34	34	400	430	613	617	622	699
N.Y. City	54	88	13	6	516	690	661	705
N.J.	19	22	98	91	419	656	413	524
Pa.	16	22	107	163	506	716	421	831
E. N. CENTRAL	58	84	49	54	2,394	2,629	1,865	1,685
Ohio	15	12	16	13	730	602	544	618
Ind.	12	5	1	-	268	291	241	332
Ill.	1	43	7	9	605	854	429	1
Mich.	19	17	19	23	413	504	421	535
Wis.	11	7	6	9	378	378	230	199
W. N. CENTRAL	23	36	196	354	970	1,254	1,109	1,406
Minn.	6	13	20	52	259	280	355	375
Iowa	3	1	43	49	167	184	168	190
Mo.	8	9	16	28	252	397	390	473
N. Dak.	-	-	24	89	14	27	44	51
S. Dak.	-	-	25	66	74	53	63	59
Nebr.	2	5	4	-	79	113	-	89
Kans.	4	6	64	71	125	200	99	169
S. ATLANTIC	167	161	1,224	1,320	4,134	3,548	2,673	3,011
Del.	1	3	18	20	47	62	43	69
Md.	66	57	163	245	432	419	418	400
D.C.	10	12	-	-	39	33	U	U
Va.	36	31	249	338	781	490	497	496
W. Va.	1	2	76	72	56	80	71	81
N.C.	9	12	334	332	588	466	459	522
S.C.	4	1	78	76	406	321	374	287
Ge.	8	4	174	157	592	614	624	684
Fla.	31	39	132	80	1,193	1,063	187	252
E. S. CENTRAL	16	22	116	106	1,015	1,039	734	854
Ky.	6	6	14	15	172	202	113	151
Tenn.	7	5	74	57	285	248	302	362
Ala.	3	10	28	34	315	283	244	267
Miss.	-	1	-	-	243	306	75	54
W. S. CENTRAL	6	46	505	549	1,270	2,392	1,117	1,481
Ark.	3	2	19	-	307	305	32	267
La.	1	8	-	2	250	412	360	330
Okla.	1	4	44	36	167	184	154	153
Tex.	1	32	442	511	546	1,491	511	731
MOUNTAIN	29	30	136	150	1,127	1,436	755	1,376
Mont.	2	1	21	39	44	61	-	-
Idaho	3	2	2	1	77	80	4	70
Wyo.	-	-	20	39	34	40	22	33
Colo.	15	15	-	-	310	427	276	401
N. Mex.	1	-	7	13	132	126	106	124
Ariz.	3	5	83	53	329	331	216	365
Utah	3	3	2	4	129	217	108	234
Nev.	2	4	1	1	72	153	23	149
PACIFIC	117	151	211	183	2,529	2,974	2,038	3,141
Wash.	4	13	-	-	257	257	358	369
Oreg.	5	24	-	-	120	179	167	232
Calif.	100	106	174	155	1,920	2,384	1,332	2,384
Alaska	1	-	37	24	25	32	2	23
Hawaii	7	8	-	-	207	122	179	123
Guam	-	-	-	-	-	-	U	U
P.R.	3	4	62	46	324	326	U	U
V.I.	-	-	-	-	-	-	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	7	U	U	U

N: Not notifiable.

U: Unavailable.

-: No reported cases.

\* Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).



**TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)**

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHUS		Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000				
UNITED STATES	7,951	11,714	3,839	6,554	3,094	3,472	6,580	7,996
NEW ENGLAND	127	212	110	204	29	51	236	229
Maine	6	6	2	-	-	1	7	8
N.H.	2	4	2	7	1	1	11	11
Vt.	3	2	2	-	2	-	2	4
Mass.	86	152	63	140	17	34	131	132
R.I.	8	12	17	19	3	4	21	24
Conn.	22	36	24	39	6	11	64	50
MID. ATLANTIC	689	1,635	510	1,020	286	189	1,294	1,276
Upstate N.Y.	340	468	76	168	19	6	173	152
N.Y. City	189	705	236	447	151	72	676	691
N.J.	40	318	133	266	59	36	293	305
Pa.	120	144	65	139	57	53	139	128
E.N. CENTRAL	1,618	2,429	656	736	826	721	690	768
Ohio	988	164	357	145	46	46	118	169
Ind.	133	890	23	111	103	227	53	76
Ill.	219	689	143	2	138	251	349	353
Mich.	162	482	118	441	222	163	135	117
Wis.	116	204	15	37	17	34	35	53
W.N. CENTRAL	824	1,208	696	1,017	39	43	240	281
Minn.	237	336	282	387	20	6	131	89
Iowa	259	290	222	214	1	10	18	23
Mo.	138	420	115	298	8	22	59	109
N. Dak.	13	4	9	5	-	-	3	2
S. Dak.	87	4	50	3	-	-	8	11
Nebr.	46	51	-	46	1	2	21	35
Kans.	44	113	20	64	9	3	-	-
S. ATLANTIC	1,207	1,457	369	561	1,092	1,150	1,322	1,629
Del.	5	9	4	10	7	5	9	7
Md.	89	87	37	54	128	166	115	148
D.C.	29	30	U	U	21	21	15	13
Va.	122	238	57	206	67	78	126	155
W. Va.	7	3	7	3	-	2	19	19
N.C.	214	72	101	51	256	324	196	216
S.C.	150	66	72	57	153	125	193	150
Ge.	124	133	72	112	178	213	235	331
Fla.	487	819	19	66	262	216	484	590
E.S. CENTRAL	796	540	343	324	354	508	417	520
Ky.	294	167	149	50	26	53	71	58
Tenn.	59	227	60	248	201	307	148	201
Ala.	150	33	114	23	67	70	146	174
Miss.	293	113	20	3	60	76	52	67
W.S. CENTRAL	1,023	1,895	692	568	401	489	679	1,165
Ark.	388	119	155	43	22	62	85	118
La.	108	177	112	108	82	116	-	71
Okla.	24	66	13	23	41	72	82	90
Tex.	503	1,533	412	394	256	219	512	866
MOUNTAIN	482	520	253	358	131	128	233	287
Mont.	1	5	-	-	-	-	7	4
Idaho	23	37	-	23	-	1	7	1
Wyo.	2	2	-	2	-	1	2	1
Colo.	101	88	80	50	24	5	66	43
N. Mex.	66	56	40	37	10	10	11	26
Ariz.	226	209	99	143	86	106	95	121
Utah	30	37	26	46	7	1	16	27
Nev.	33	84	8	58	4	4	36	57
PACIFIC	1,185	1,818	208	1,766	236	233	1,479	1,741
Wash.	102	329	119	293	34	36	132	146
Oreg.	40	106	61	67	4	9	53	51
Calif.	1,006	1,352	-	1,363	192	187	1,180	1,395
Alaska	4	7	1	3	-	-	27	66
Hawaii	30	24	27	20	6	1	67	81
Guam	-	27	U	U	-	2	-	33
P.R.	6	21	U	U	259	100	54	92
V.I.	-	-	U	U	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	4	U	U	U	-	U	19	U

R: Not notifiable.

U: Unavailable.

-: No reported cases.

\*Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

**TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)**

Reporting Area	<i>H. influenzae</i> , Invasive		Hepatitis (Viral), By Type				Measles (Rubeola)					
	Cum. 2001 <sup>1</sup>	Cum. 2000	A		B		Indigenous		Imported*		Total	
			Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	2001	Cum. 2001	2001	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	816	790	5,246	7,238	3,586	3,966	-	42	-	32	74	61
NEW ENGLAND	46	61	262	214	60	63	-	4	-	1	5	6
Maine	1	1	5	10	5	5	-	-	-	-	-	-
N.H.	-	10	11	17	11	11	-	-	-	-	-	3
Vt.	2	4	7	17	3	6	-	1	-	-	1	3
Mass.	32	30	89	87	3	6	-	2	-	1	3	-
R.I.	2	1	15	8	14	9	-	-	-	-	-	-
Conn.	8	15	135	86	24	26	-	1	-	-	1	-
MID. ATLANTIC	105	147	484	778	542	687	-	2	-	9	11	20
Upstate N.Y.	43	56	154	131	80	70	-	1	-	4	5	9
N.Y. City	26	40	177	279	275	330	-	-	-	-	-	10
N.J.	26	29	70	138	64	116	-	-	-	1	1	-
Pa.	10	22	93	230	123	171	-	1	-	4	5	1
E. N. CENTRAL	109	116	574	929	441	414	-	-	-	10	10	6
Ohio	49	36	143	159	70	71	-	-	-	3	3	2
Ind.	32	15	52	30	26	30	-	-	-	4	4	-
Ill.	10	41	164	405	62	62	-	-	-	3	3	3
Mich.	5	7	176	283	283	232	-	-	-	-	-	1
Wis.	13	15	39	52	-	19	-	-	-	-	-	-
W. N. CENTRAL	40	39	225	488	110	178	-	4	-	-	4	1
Minn.	23	20	16	131	13	21	-	2	-	-	2	1
Iowa	-	-	19	51	14	19	-	-	-	-	-	-
Mo.	11	12	59	215	53	93	-	2	-	-	2	-
N. Dak.	4	2	2	2	-	2	-	-	-	-	-	-
S. Dak.	-	-	1	-	1	-	-	-	-	-	-	-
Nebr.	1	3	27	21	16	27	-	-	-	-	-	-
Kans.	1	2	101	68	13	16	-	-	-	-	-	-
S. ATLANTIC	246	183	1,197	750	744	682	-	3	-	1	4	2
Del.	-	-	-	10	-	9	-	-	-	-	-	-
Md.	58	52	155	95	88	76	-	2	-	1	3	-
D.C.	-	-	28	15	15	19	-	-	-	-	-	-
Va.	18	29	78	89	88	92	-	-	-	-	-	2
W. Va.	8	4	7	47	18	6	-	-	-	-	-	-
N.C.	32	17	87	97	111	142	-	-	-	-	-	-
S.C.	5	7	40	30	17	5	-	-	-	-	-	-
Ga.	63	48	471	126	176	119	-	1	-	-	1	-
Fla.	62	26	333	241	235	214	-	-	-	-	-	-
E. S. CENTRAL	56	36	204	274	247	283	-	2	-	-	2	-
Ky.	2	12	47	32	22	56	-	2	-	-	2	-
Tenn.	27	14	82	97	134	128	-	-	-	-	-	-
Ala.	25	7	62	40	52	32	-	-	-	-	-	-
Miss.	1	2	13	105	39	68	-	-	-	-	-	-
W. S. CENTRAL	31	43	612	1,349	415	598	-	1	-	-	1	-
Ark.	-	1	44	98	57	65	-	-	-	-	-	-
La.	3	12	47	46	28	85	-	-	-	-	-	-
Okl.	28	28	98	159	63	78	-	-	-	-	-	-
Tex.	-	2	433	1,047	267	370	-	1	-	-	1	-
MOUNTAIN	110	78	484	503	336	298	-	-	-	1	1	12
Mont.	-	-	8	3	2	3	-	-	-	-	-	-
Idaho	1	3	48	18	8	-	-	-	-	1	1	-
Wy.	13	1	22	4	29	-	-	-	-	-	-	-
Colo.	25	16	44	124	71	49	-	-	-	-	-	2
N. Mex.	14	16	22	44	81	94	-	-	-	-	-	-
Ariz.	42	32	250	239	105	107	-	-	-	-	-	-
Utah	6	7	48	33	15	14	-	-	-	-	-	3
Nev.	9	3	42	38	25	26	U	-	U	-	-	7
PACIFIC	75	78	1,204	1,953	691	763	-	26	-	10	36	14
Wash.	1	3	67	173	76	51	-	13	-	2	15	3
Oreg.	16	22	49	128	43	64	-	3	-	-	3	-
Calif.	32	29	1,074	1,629	553	632	-	8	-	4	12	8
Alaska	3	5	13	11	5	7	-	-	-	-	-	1
Hawaii	23	19	1	12	14	9	-	2	-	4	6	2
Guam	-	1	-	1	-	9	U	-	U	-	-	-
P.R.	1	3	58	175	102	158	-	-	-	-	-	2
V.I.	-	-	-	-	-	-	U	-	U	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	20	U	U	-	U	-	-	U

N: Not notifiable.

U: Unavailable.

-: No reported cases.

\*For imported measles, cases include only those resulting from importation from other countries.

\* Of 166 cases among children aged &lt;5 years, serotype was reported for 80, and of those, 15 were type b.

**TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending July 28, 2001, and July 29, 2000 (30th Week)**

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000
UNITED STATES	1,454	1,445	5	118	211	50	2,495	3,305	-	16	95
NEW ENGLAND	80	86	-	-	3	-	254	895	-	-	11
Maine	1	7	-	-	-	-	-	14	-	-	-
N.H.	10	9	-	-	-	-	25	74	-	-	2
Vt.	4	2	-	-	-	-	24	161	-	-	-
Mass.	46	50	-	-	1	-	189	602	-	-	8
R.I.	2	6	-	-	1	-	2	11	-	-	-
Conn.	17	12	-	-	1	-	14	33	-	-	1
MID. ATLANTIC	149	164	-	10	16	1	202	278	-	4	8
Upstate N.Y.	43	47	-	1	5	1	109	140	-	1	1
N.Y. City	30	34	-	6	5	-	33	44	-	2	7
N.J.	38	27	-	-	3	-	8	6	-	1	-
Pa.	38	56	-	3	3	-	52	88	-	-	-
E.N. CENTRAL	182	247	2	14	17	21	297	385	-	3	1
Ohio	62	55	-	1	7	21	189	192	-	-	-
Ind.	29	31	-	1	-	-	27	38	-	1	-
Ill.	20	63	-	8	5	-	30	31	-	2	1
Mich.	40	72	2	4	4	-	27	46	-	-	-
Wis.	31	26	-	-	1	-	24	78	-	-	-
W.N. CENTRAL	101	100	1	6	12	1	122	179	-	2	1
Minn.	15	14	-	2	-	-	31	88	-	-	-
Iowa	21	21	-	-	5	-	16	26	-	1	-
Mo.	37	48	-	-	4	-	55	33	-	-	-
N. Dak.	5	2	-	-	-	-	-	1	-	-	-
S. Dak.	4	5	-	-	-	-	3	3	-	-	-
Nebr.	10	4	-	1	1	1	4	4	-	-	1
Kans.	9	6	1	3	2	-	13	24	-	1	-
S. ATLANTIC	279	210	1	18	30	9	128	244	-	4	50
Del.	2	-	-	-	-	-	-	6	-	-	-
Md.	34	21	-	4	-	-	18	86	-	1	-
D.C.	-	-	-	-	-	-	-	1	-	-	-
Va.	30	34	-	2	5	-	13	33	-	-	-
W. Va.	10	10	-	-	-	-	1	1	-	-	-
N.C.	56	30	-	1	4	5	46	51	-	-	42
S.C.	27	15	-	1	9	-	23	20	-	2	6
Ga.	36	37	-	7	2	-	7	21	-	-	-
Fla.	84	63	1	3	4	4	19	42	-	1	2
E.S. CENTRAL	100	101	-	3	4	4	80	70	-	1	4
Ky.	18	21	-	1	-	-	11	35	-	-	1
Tenn.	44	40	-	-	2	3	27	20	-	1	-
Ala.	29	29	-	-	2	1	19	12	-	-	3
Miss.	9	11	-	2	-	-	3	3	-	-	-
W.S. CENTRAL	167	152	-	8	22	3	205	150	-	-	6
Ark.	12	10	-	1	1	-	8	14	-	-	1
La.	54	35	-	2	4	-	2	12	-	-	1
Okla.	21	21	-	-	-	-	-	9	-	-	-
Tex.	80	86	-	5	17	3	194	115	-	-	4
MOUNTAIN	74	64	-	7	14	7	919	429	-	1	2
Mont.	3	4	-	-	1	1	14	12	-	-	-
Idaho	7	6	-	-	-	-	164	42	-	-	-
Wyo.	6	-	-	1	1	-	1	2	-	-	-
Colo.	25	20	-	1	-	3	165	238	-	1	1
N. Mex.	11	6	-	2	1	1	64	73	-	-	-
Ariz.	11	19	-	1	3	-	460	41	-	-	1
Utah	7	6	-	1	4	2	42	12	-	-	-
Nev.	4	3	U	1	4	U	9	9	U	-	-
PACIFIC	322	321	1	52	93	4	308	675	-	1	12
Wash.	47	33	-	1	3	3	84	203	-	-	7
Oreg.	24	38	N	N	N	-	29	86	-	-	-
Calif.	241	237	-	27	71	-	169	365	-	-	5
Alaska	2	5	-	1	7	-	2	13	-	-	-
Hawaii	8	8	1	23	12	1	24	28	-	1	-
Guam	-	-	U	-	-	11	U	3	U	-	1
P.R.	3	7	-	-	-	-	2	5	-	-	-
V.I.	-	-	U	-	-	U	-	-	U	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	U	-	-	U	-	U	U	-	U

N: Not notifiable.

U: Unavailable.

-: No reported cases.

TABLE IV. Deaths in 122 U.S. cities,\* week ending July 28, 2001 (30th Week)

Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total	Reporting Area	All Causes, By Age (Years)						P&I <sup>†</sup> Total	
	All Ages	≤65	45-64	25-44	1-24	<1			All Ages	≤65	45-64	25-44	1-24	<1		
NEW ENGLAND	506	375	86	29	9	7	51	S. ATLANTIC	1,281	810	283	122	31	36	83	
Boston, Mass.	175	122	28	14	7	4	23	Atlanta, Ga.	185	109	50	20	4	2	-	
Bridgeport, Conn.	38	32	4	1	1	-	2	Baltimore, Md.	155	96	41	10	4	4	15	
Cambridge, Mass.	15	11	4	-	-	-	1	Charlotte, N.C.	93	54	23	11	-	5	13	
Fall River, Mass.	36	31	4	-	-	-	3	Jacksonville, Fla.	135	94	21	14	6	-	9	
Hartford, Conn.	21	17	3	1	-	-	-	Miami, Fla.	97	66	14	7	3	4	6	
Lowell, Mass.	24	19	3	2	-	-	3	Norfolk, Va.	47	32	7	2	1	5	6	
Lynn, Mass.	9	6	3	-	-	-	1	Richmond, Va.	52	30	14	4	3	1	2	
New Bedford, Mass.	30	25	3	2	-	-	1	Savannah, Ga.	51	32	11	5	1	2	6	
New Haven, Conn.	40	27	10	2	-	1	5	St. Petersburg, Fla.	53	36	10	3	-	2	4	
Providence, R.I.	U	U	U	U	U	U	U	Tampa, Fla.	196	137	41	11	3	4	15	
Somerville, Mass.	5	4	-	1	-	-	-	Washington, D.C.	202	119	49	22	6	6	7	
Springfield, Mass.	36	19	12	3	-	2	4	Wilmington, Del.	15	-	2	13	-	-	-	
Waterbury, Conn.	21	20	-	-	1	-	-	E.S. CENTRAL	822	540	194	56	18	14	48	
Worcester, Mass.	57	42	12	3	-	-	8	Birmingham, Ala.	159	98	43	12	3	3	17	
MID. ATLANTIC	1,977	1,368	395	132	43	39	88	Chattanooga, Tenn.	72	50	16	5	1	-	-	
Albany, N.Y.	52	39	8	2	1	5	6	Knoxville, Tenn.	105	69	26	6	3	1	2	
Allentown, Pa.	19	14	4	-	1	-	1	Lexington, Ky.	72	53	13	4	2	-	6	
Buffalo, N.Y.	89	63	18	6	2	-	9	Memphis, Tenn.	177	112	42	14	4	5	10	
Camden, N.J.	28	17	5	6	-	-	2	Mobile, Ala.	86	63	18	4	1	-	2	
Elizabeth, N.J.	15	9	5	1	-	-	-	Montgomery, Ala.	29	21	2	3	3	-	6	
Erie, Pa.	44	28	12	3	1	-	1	Nashville, Tenn.	122	74	34	8	1	5	5	
Jersey City, N.J.	36	25	6	4	-	-	-	W.S. CENTRAL	1,418	904	274	132	62	46	93	
New York City, N.Y.	1,057	720	221	77	24	15	39	Austin, Tex.	55	40	8	3	1	3	5	
Newark, N.J.	U	U	U	U	U	U	U	Baton Rouge, La.	47	26	12	5	1	3	4	
Paterson, N.J.	20	14	4	1	-	1	-	Corpus Christi, Tex.	46	31	8	6	3	-	4	
Philadelphia, Pa.	310	197	71	32	7	13	13	Dallas, Tex.	193	119	42	13	11	8	17	
Pittsburgh, Pa.	33	22	7	1	2	1	1	El Paso, Tex.	80	59	11	7	2	1	-	
Reading, Pa.	28	23	2	1	-	-	1	Ft. Worth, Tex.	145	93	26	14	5	7	10	
Rochester, N.Y.	120	97	17	4	-	2	10	Houston, Tex.	324	182	72	41	17	12	22	
Schenectady, N.Y.	18	18	-	-	-	-	-	Little Rock, Ark.	70	47	11	5	3	4	-	
Scranton, Pa.	25	23	2	-	-	-	-	New Orleans, La.	83	46	20	11	4	2	3	
Syracuse, N.Y.	43	29	9	2	3	-	4	San Antonio, Tex.	182	122	35	13	9	3	14	
Trenton, N.J.	25	18	1	2	2	2	-	Shreveport, La.	73	50	14	6	3	-	8	
Utica, N.Y.	15	12	3	-	-	-	1	Tulsa, Okla.	118	89	15	8	3	3	6	
Yonkers, N.Y.	U	U	U	U	U	U	U	MOUNTAIN	798	527	150	66	34	19	36	
E.N. CENTRAL	1,635	1,120	345	99	31	40	102	Albuquerque, N.M.	144	106	20	12	4	2	7	
Akron, Ohio	41	27	9	2	1	2	8	Boise, Idaho	43	24	9	7	3	-	-	
Canton, Ohio	33	24	7	2	-	-	2	Colo. Springs, Colo.	67	50	7	7	1	2	4	
Chicago, Ill.	U	U	U	U	U	U	U	Denver, Colo.	104	72	16	6	4	6	5	
Cincinnati, Ohio	81	67	13	1	-	-	8	Las Vegas, Nev.	U	U	U	U	U	U	U	
Cleveland, Ohio	156	94	46	8	4	5	5	Ogden, Utah	25	14	7	2	2	-	-	
Columbus, Ohio	208	144	50	7	2	5	5	Phoenix, Ariz.	156	90	36	19	7	2	7	
Dayton, Ohio	120	93	19	6	1	1	12	Pueblo, Colo.	30	23	5	1	1	-	-	
Detroit, Mich.	180	96	51	26	8	1	14	Salt Lake City, Utah	109	66	28	3	9	3	6	
Evansville, Ind.	34	26	6	1	-	1	5	Tucson, Ariz.	120	82	22	9	3	4	6	
Fort Wayne, Ind.	63	43	13	4	1	2	4	PACIFIC	1,141	797	208	76	30	30	85	
Gary, Ind.	19	6	7	2	3	1	-	Berkeley, Calif.	21	10	7	2	-	2	1	
Grand Rapids, Mich.	40	36	8	3	-	2	4	Fresno, Calif.	139	93	27	9	4	6	3	
Indianapolis, Ind.	214	126	57	16	8	7	13	Glendale, Calif.	U	U	U	U	U	U	U	
Lansing, Mich.	57	46	4	3	1	3	5	Honolulu, Hawaii	66	52	6	5	-	2	3	
Milwaukee, Wis.	108	81	19	4	-	4	11	Long Beach, Calif.	82	38	15	4	3	2	10	
Peoria, Ill.	56	44	9	1	-	2	2	Los Angeles, Calif.	U	U	U	U	U	U	U	
Rockford, Ill.	53	39	11	1	2	-	2	Pasadena, Calif.	20	14	3	2	-	1	2	
South Bend, Ind.	U	U	U	U	U	U	U	Portland, Oreg.	164	119	29	10	5	1	7	
Toledo, Ohio	105	80	13	7	1	4	6	Sacramento, Calif.	197	132	39	11	10	5	27	
Youngstown, Ohio	58	48	4	5	1	-	1	San Diego, Calif.	165	116	30	11	4	4	11	
W.N. CENTRAL	882	590	163	54	30	25	64	San Francisco, Calif.	U	U	U	U	U	U	U	
Des Moines, Iowa	115	82	25	4	3	1	12	San Jose, Calif.	U	U	U	U	U	U	U	
Duluth, Minn.	26	20	4	-	1	1	-	Santa Cruz, Calif.	27	22	3	2	-	-	4	
Kansas City, Kans.	28	18	4	3	3	-	2	Seattle, Wash.	135	92	26	12	1	4	6	
Kansas City, Mo.	135	80	36	9	7	4	8	Spokane, Wash.	50	39	8	1	1	1	6	
Lincoln, Nebr.	46	35	7	1	1	1	3	Tacoma, Wash.	96	70	15	7	2	2	5	
Minneapolis, Minn.	175	131	30	7	4	3	19	TOTAL	10,440 <sup>‡</sup>	7,031	2,098	766	288	255	649	
Omaha, Nebr.	92	68	16	4	2	2	6									
St. Louis, Mo.	84	48	15	13	3	5	2									
St. Paul, Minn.	66	47	14	2	1	2	6									
Wichita, Kans.	96	61	13	11	5	6	6									

U: Unavailable. -/No reported cases.

\*Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

‡Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

§Total includes unknown ages.

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